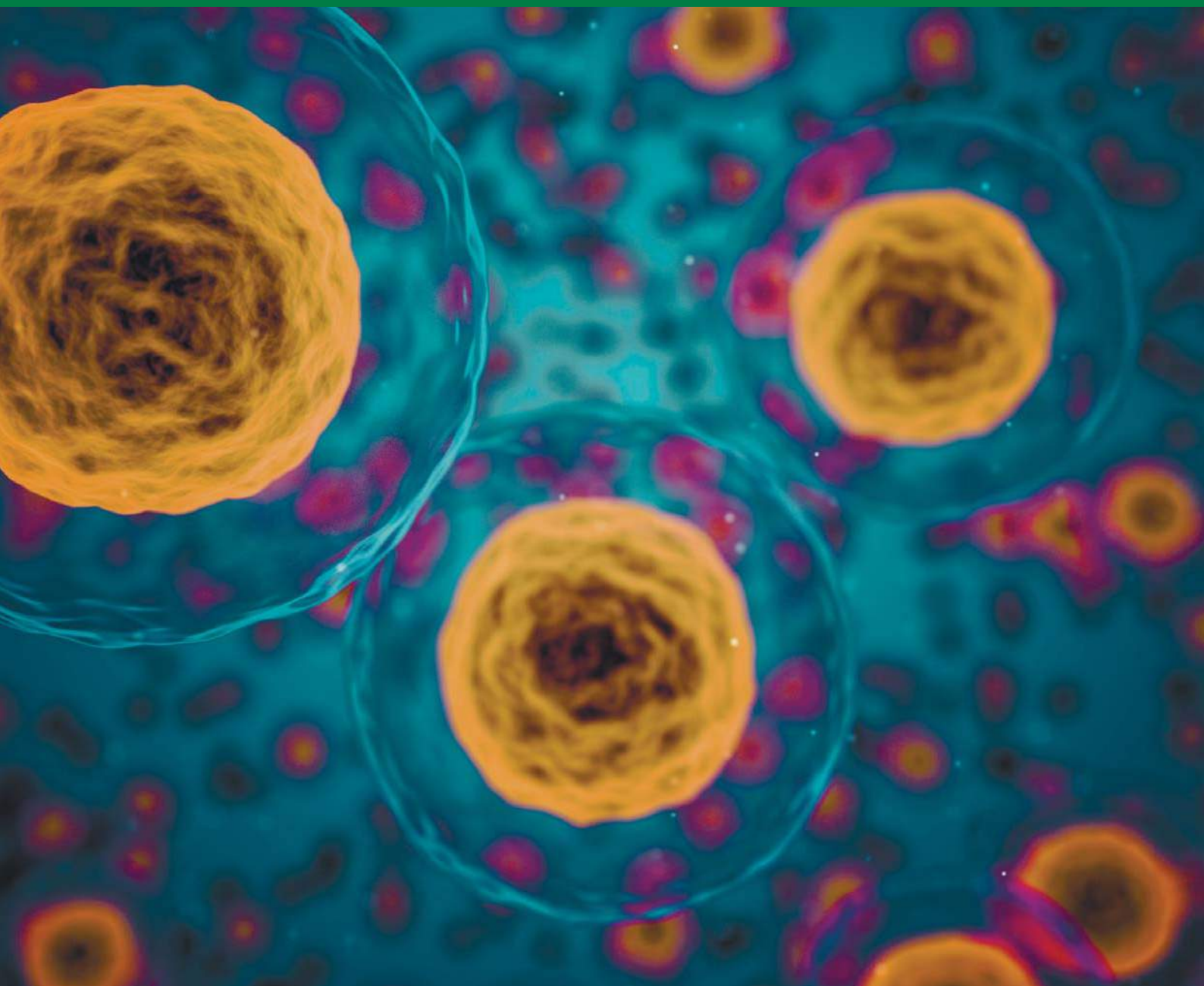
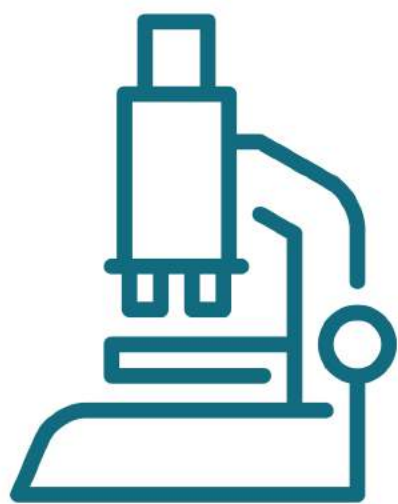


Kharkiv National Medical University

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**KHARKIV NATIONAL  
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**BIOMEDICAL SCIENCES**





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# **CLINICAL SIGNIFICANCE OF PENTRAXIN-3 AND C-REACTIVE PROTEIN IN THE DIFFERENTIATION OF STAGES OF NONALCOHOLIC FATTY LIVER DISEASE**

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**Introduction:** Non-alcoholic fatty liver disease (NAFLD) is the most common liver disorder . It encompasses a range of conditions from hepatic steatosis to cirrhosis and liver cancer. In patients with NAFLD, the progression from simple steatosis to Non-alcoholic steatohepatitis and cirrhosis is characterized by cellular injury from oxidative stress and cytokine-driven intrahepatic inflammation . There are studies suggesting that the intrahepatic inflammation associated with NAFLD may be linked to systemic elevations in inflammatory biomarkers, such as C-reactive protein (CRP) and novel marker for NASH - Pentraxin-3 .

The aim of the study was to investigate clinical usefulness of CRP and Pentraxin-3 plasma levels in differentiation of stages of NAFLD.

**Materials and methods:** The study was conducted on the Department of Gastroenterology of the State Institution "National Institute of Therapy named after L.T. Malaya of Ukraine", and on the therapeutic department of the Municipal Health Institution "Lozovsky Territorial Medical Association, Ukraine"

40 patients with NAFLD were examined. They were divided into 2 groups: group 1 included 15 patients with hepatic steatosis (8 men and 7 women, average age of  $41 \pm 4.6$  years), and group 2 included 25 patients with NASH (13 men and 12 women, average age of  $42 \pm 3.2$  years). Control group (group 3) was formed of 20 apparently healthy people (9 men and 6 women, average age of  $(40 \pm 2.9)$  years).

The level of Pentraxin3 was determined according to the enzyme multiplied immunoassay method using Human Pentraxin3 ELISA KIT produced by Multisciences (Lianke) Biotech Co. (China) with Immunochem2100 immunoenzymometric analyzer (USA).

CRP level was determined by the photometric turbidimetric method by utilizing Beckman Coulter AU480 biochemical analyzer (USA).



The level of plasma Pentraxin-3 are found higher than normal controls in various inflammatory conditions such as rheumatologic disorders, asthma, coronary artery diseases and systemic inflammation and sepsis. Because NASH is also an ongoing inflammatory condition, we hypothesized that plasma Pentraxin-3 levels increase in patients with NASH.

Results and discussion: The main clinical and biochemical characteristics of the NAFLD patients and control subjects showed that the average level of systolic blood pressure (SBP)

and diastolic blood pressure (DBP) in patients with NASH was slightly higher in comparison with the group of patients with hepatic steatosis, and significantly higher in comparison with the control group.

Thus, the SBP level was (128 + 7.4) Mmhg in group 1, (138 + 10.5) Mmhg in group 2, and (115+9.1) Mmhg in the control group ( $p < 0.05$ ). The DBP level was, respectively: (88 + 7.5) Mmhg in group 1, (96 + 8.1) Mmhg in group 2, and (77 + 8.4) Mmhg in the control group ( $p < 0.05$ ).

Conclusions: The present study demonstrated higher plasma Pentraxin-3 and CRP levels in patients with NASH than in patients with steatosis and control group. Pentraxin-3 and CRP may be promising biomarkers for the presence of NASH. Further evaluation of plasma Pentraxin-3 levels in larger numbers of NAFLD patients is recommended to assess any possible clinical usefulness for the noninvasive differentiation of stages of NAFLD.

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## **HYPERTENSION IN EUROPE**

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Hypertension is the consistent constant elevation of systolic or diastolic pressure above 140/90 mmHg. Systolic is pressure exerted when blood is ejected into arteries, normal systolic blood pressure is 120 mmHg or below, while diastolic is pressure of blood